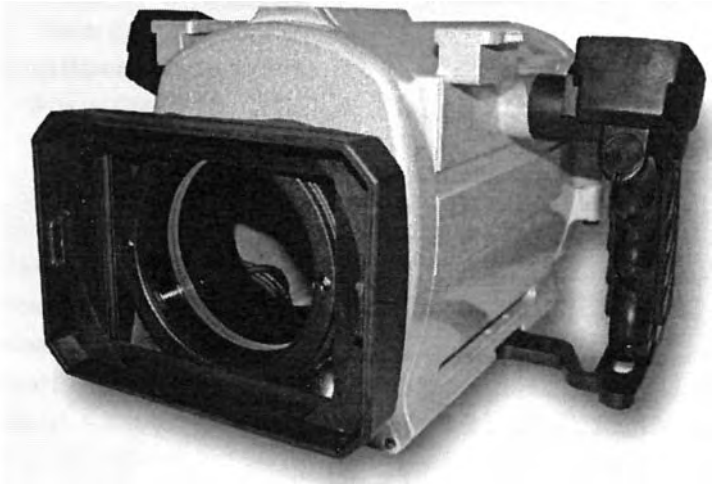
AMPHIBICO

Underwater Imaging Equipment..... Diver Designed®

Dive Buddy® evo HD elite



Instruction Manual

Video Camera Housing for
SONY® HDR-HC5/HC7

Before operating the unit, please read this manual carefully. Keep it for future reference.

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FEATURES

Our new **Dive Buddy EVO HD** for the Sony HDR-HC5/HC7 camcorder has arrived!

Now equipped with a 3.5" rear LCD monitor, everyone can shoot High Definition images and take superior digital stills underwater!!
Good ergonomics and electronic controls with superb optics is what the Dive Buddy EVO HD offers you in a small compact housing.

Electronic controls:
The housing provides electronic controls on a newly designed marine grip.

- Record / Standby (Camera mode)
- Shutter (Photo mode)
- Zoom T & W with variable zoom speed
- Mode (Camera / Photo / VTR)
- Focus
- Power ON /OFF

Five Electronic Push Button Controls on Right grip:

- The trigger button will access the Record / Standby function while in camera mode, the Shutter function while in Photo mode and the Pause function while in VTR (Playback) mode.
- **Variable speed** ZOOM-W & ZOOM-T engages the zoom function of the camera.
- The MODE button will switch the camera from the CAMERA to the PHOTO mode and from the PHOTO mode to the VTR mode.
- By pressing the FOCUS mode you will engage the Focus Lock, pushing it again will bring the setting back to auto focus.
- Power ON / OFF: Press on the trigger button to turn ON the unit and press again while holding down the MODE button to turn it OFF

74° **Optics**
Marine bayonet mounted lens system 0.55X rectilinear fully coated amphibious conversion lens, vacuum-sealed for maximum anti-fog protection. Includes a square lens hood complete w/3" x 4" filter slot 74° degree angle of coverage top side, 67° coverage underwater & full zoom through capability

SPECIFICATIONS

Dive Buddy EVO HD

Marine Housing for the Sony® HDR-HC5/HC7

- Marine Grade Aluminum Construction
- Fully anodized with a hard coat of polyurethane paint
- Ail hardware is marine grade brass and stainless steel
- Optics: Marine bayonet mounted lens system.
  74° angle of coverage underwater amphibious conversion lens
- Internal Flip filter with a UR Pro Blue Water Filter installed
- External Hydrophone to pick up high frequency sounds, such as whales and dolphins
- Rear Viewfinder
- Auxiliary port

Weight of unit (W/O lead bars):

- On land: 10.6 lbs. (4.80kg) fully loaded w/camera battery and lens.
- In seawater: 14.1-oz (400g) negative buoyancy

Dimensions :

- Length 12" (305mm)
- Width 10.5" (267mm)
- Height 6.5" (165mm)

Measurements includes lens and grips

Operating depth :

Each unit is pressure tested to 330ft (100m)

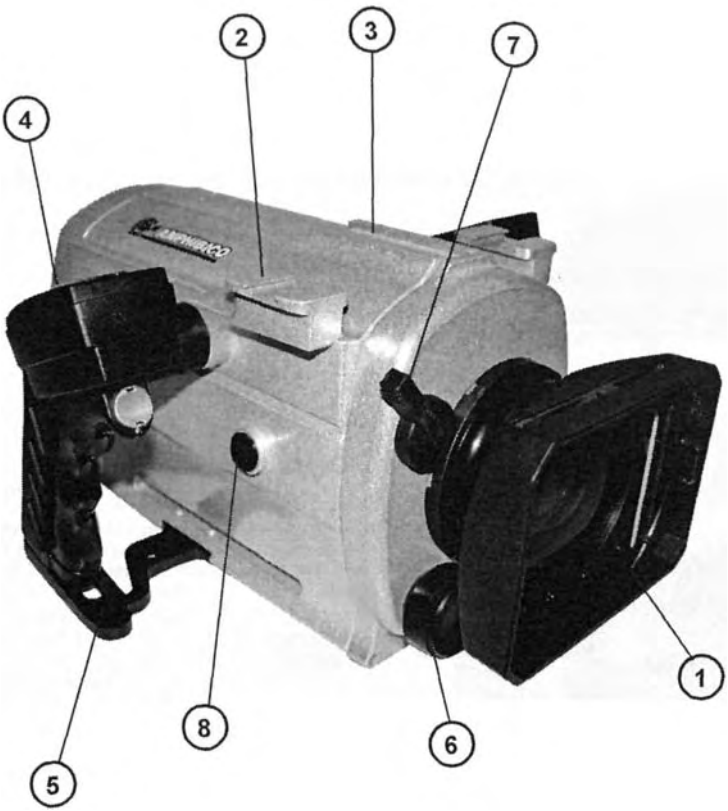
Accessories included :

- Camera Saddle
- Internal Filter Ring with a 52mm UR Pro Blue Water Filter
- O-ring kit
- Instruction manual

LCD Monitor:

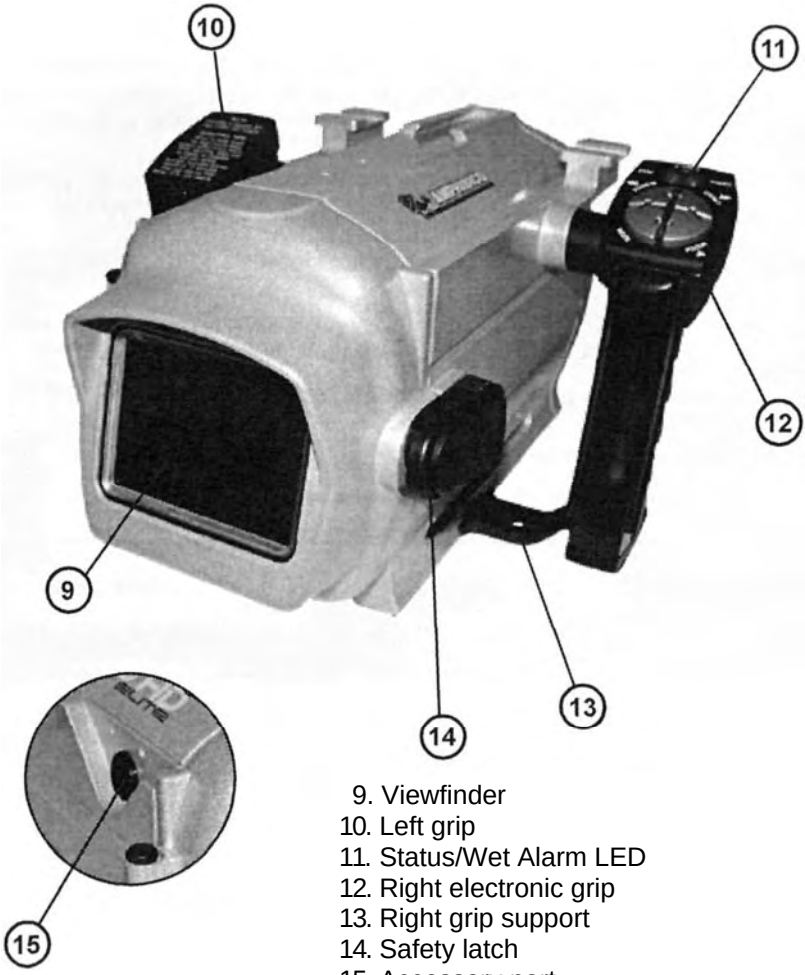
- Display size: 3.5"
- DOT format: 480 x 234
- Contrast ratio: 150:1
- Input signal: Composite, NTSC/PAL (auto switch)
- Operating temperature: 0° ~ 60°C

HOUSING FEATURES & CONTROLS



1. Bayonet mounted lens
2. Incorporated T-Brackets
3. Carry handle dove tail
4. Right electronic grip
5. Right grip support
6. Amphibico's hydrophone
7. Color correction flip filter lever
8. Accessory port

HOUSING FEATURES & CONTROLS



9. Viewfinder
10. Left grip
11. Status/Wet Alarm LED
12. Right electronic grip
13. Right grip support
14. Safety latch
15. Accessory port

UNPACKING YOUR HOUSING

Before unpacking your housing kit, inspect the shipping box as well as all contents for damage during shipping. If damage has occurred, please contact the shipping company immediately.

Every Amphibico Housing is pressure tested prior to shipping. However, damage may have occurred during shipping. It is strongly recommended to test dive the housing once without camcorder installed to insure the housing is water tight.

This instruction manual assumes that the user is already familiar with the SONY® HDR-HC5/HC7 camcorder. If not, please read instruction manuals thoroughly before beginning to use the housing.

Your Dive Buddy EVO HD housing comes to you as follows:

A) Marine Housing

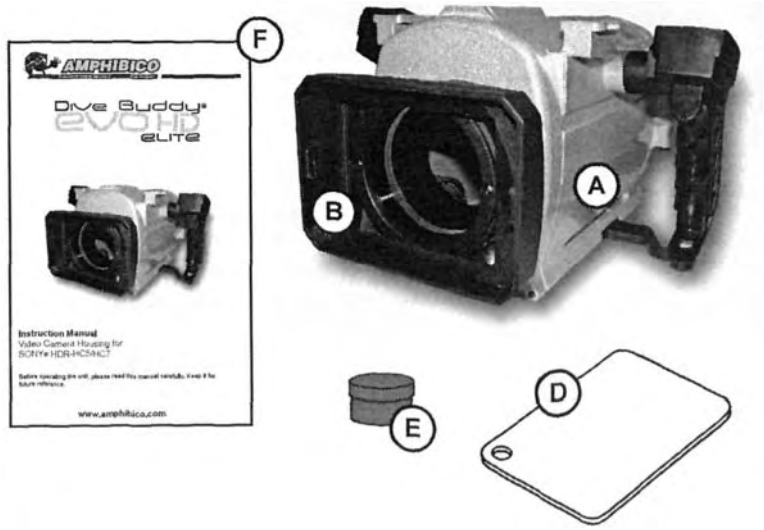
B) 0.55x, 74° wide angle bayonet mounted lens (Installed on housing)

C) Removable / lockable camera saddle (shipped mounted into position in the housing

D) Protective cover for the lens

E) O-ring kit with container of silicone grease

F) Instruction manual and warranty card

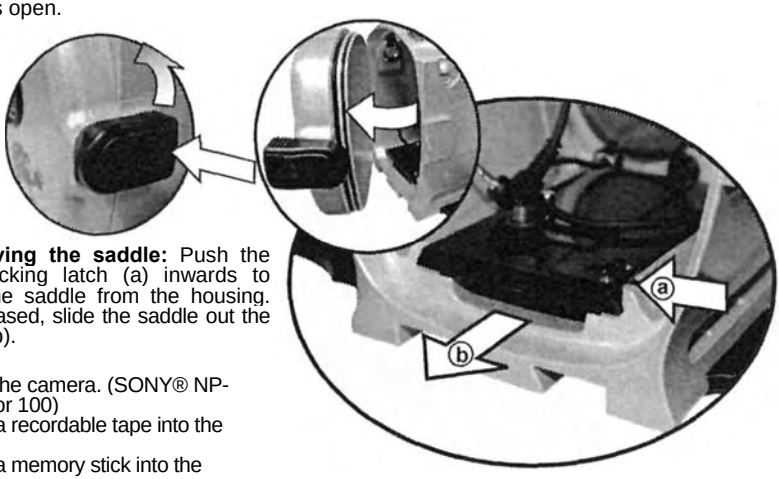


PREPARING CAMERA & HOUSING

Opening the Housing

1. Sit the housing on a flat surface. Press and rotate the rear door latch counterclockwise until the door is open.

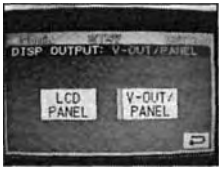
Setting the camera



1. Put a fully charged battery in the camera. (SONY® NP-FH50, 70 or 100)

2. Removing the saddle: Push the saddle locking latch (a) inwards to release the saddle from the housing. Once released, slide the saddle out the housing (b).

2. Place a recordable tape into the camera.
3. Place a memory stick into the camera.
4. In order to show the camcorder's indicators on the LCD monitor, you must set the camcorder's "DISP OUTPUT" to "V-OUT/PANEL".



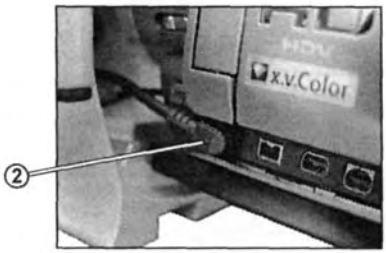
installing the saddle

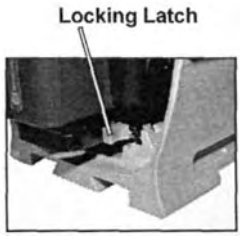
1. Attach the camera saddle onto the bottom of the camera via the tripod mounting screw. Tighten the mounting screw into the rear tripod receptacle of the camera. You can use a coin to tighten the thumbscrew if you find it difficult with your fingers. Sit the assembly on a flat surface.

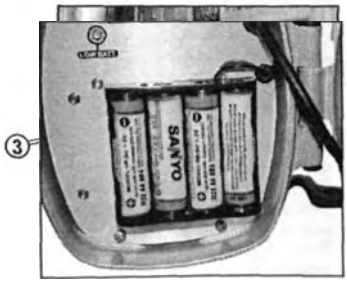
Placing the Camera in the housing

NOTE: The hand strap of the camera must be tucked in tight against the camera in order for it to properly slide into the housing.

1. Before engaging the camera into to the housing, connect the hydrophone cable (biggest) from inside the housing to the microphone jack of the camera .
2. Position the camera with saddle into to the housing into its track. Grab the LANC cable (smallest) from inside of the housing and connect it to the LANC jack of the camera.
3. Before completely inserting the camera, connect the video cable from the rear monitor inside the housing to the A/V OUT jack of the camera.
4. Lift up the hand strap tong and insert the camera fully into housing. The camera will be secured into place once the locking latch is engaged.







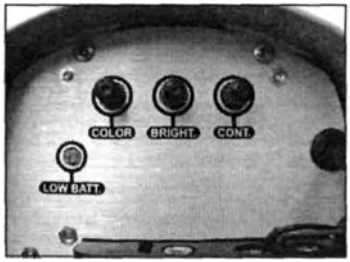
Rear LCD Monitor

It is recommended to place four fresh "AA" batteries into the battery holder before every dive.

Operating limit: Typical alkaline batteries will produce up to 30 minutes of continuous use. Nickel metal hydride batteries (Ni-MH), on the other hand, will produce up to 150 minutes.

The "LOW BATT" indicator starts to flash red once the batteries have reached their operating limit. A steady red color indicates that the batteries need to be replaced.

Rear LCD Monitor (continued)



Settings for the rear LCD monitor are located on the inside of the rear bulkhead and are described as follows.
COLOR To adjust color saturation
BRIGHT. To adjust the brightness
CONT. To adjust the contrast

WARNING:

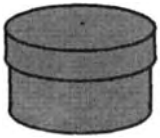
IT IS IMPORTANT TO REMOVE BATTERIES FROM BATTERY HOLDER AFTER EVERY USE. FAILURE TO DO SO MAY DRAIN THE BATTERIES OVER TIME AND CAUSE SEVERE DAMAGE TO THE UNIT.

Closing the housing

1. While the housing is open, inspect the two o-rings and the sealing surface for dirt and debris. If necessary, clean them with a lint free tissue. Make sure that the two o-rings and the sealing surface are clean. Then apply a small amount of lubricant to the o-rings.

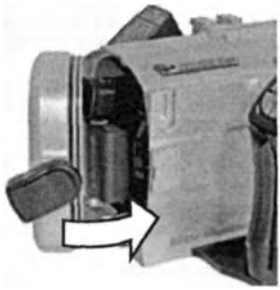
NOTE: If you have to change your o-rings, make sure you are using the o-rings provided with the package. Using different o-rings than those in the o-ring kit may cause the housing to leak and result in damage.

Silicone grease provided with the o-ring kit.



2. Make sure the camera and the cables don't block the sealing surface. If cables get pinched, the system might be intermittent or not functioning at all. Once the camera is completely in and the saddle is locked, engage the latch by turning it clockwise.

3. Make sure the o-rings are well placed before locking the latch. Turn the latch until a positive click is felt.



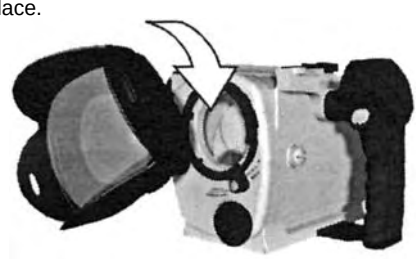
Replacing the bayonet lens

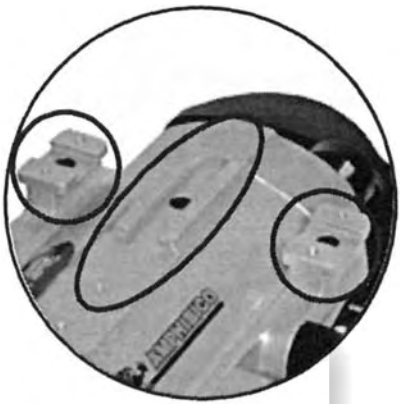
1. To remove the lens, push and hold the button on the lower right of the front bulkhead and then turn counter clockwise until the lugs are free from the bayonet ring. Pull gently on the lens to release it.

2. Remove the rear cover from the new bayonet mounted lens and place it on the previously installed lens for safe keeping. Make sure the seals on the bottom part of the lens are clean and free from dust and debris.

3. Put a small amount of lubricant on the o-ring seals and the sealing surface of the housing.

4. Line up the bayonet lug marked by a hole with the printed dot on the front bulkhead of the housing. Push the lens all the way until it sits on the bayonet ring and turn clockwise. You will hear a positive click and the lens will lock into place.





Installing Accessories

All Amphibico housings are provided with brackets where optional accessories can be mounted. On the Dive Buddy EVO HD housing, these brackets have been machined directly on the body. In fact, two T-brackets are incorporated to it. A third one, which is basically done to accommodate the carry handle, is located on top of the body.

Accessories are provided with either thumb screws, adjustable handles or setscrews.

Some of these accessories require communication with the camera's electronics. Waterproof connectors need to be installed on the housing to allow information to travel through the electronics. For example, the monitor needs to be hooked up to the AA/ connector on the camera.

Water Entry

1. Always make sure that the electronics of the housing is ON before entering the water. To turn it ON, use the trigger button. This is confirmed by the CAM indicator light turning on steady green. The camera viewfinder will also turn ON.

Doing step 1 will activate the built-in moisture alarm sensor located in the bottom of the housing.

IMPORTANT
Both indicator lights will start flashing RED if water leakage occurs into the housing unit. Remove from water as soon as possible, take the camera out of the housing and inspect all seals and the inside of the housing. ALWAYS REMEMBER DIVER SAFETY FIRST.

2. Lower the housing just below the water surface in level position and hold for one minute to confirm there is no leakage in the housing. Never leap into the water while holding the housing. Always have the housing handed to you or lowered down once you are in the water.

3. Point the lens of the housing upwards and shake off any air bubbles. It may also be necessary to gently wipe the lens with your finger to remove bubbles.

Trigger Button

HOUSING CAMERA & OPERATIONS

At this point, you should be underwater going down chasing your subject and looking for the best video shot. The Dive Buddy EVO HD housing offers a large range of functions like Zoom, record / standby, photo & camera modes, focus, and playback capabilities. This chapter will explain you how to use these functions as efficient as possible.

WARNING:
The following instruction assumes that there is a tape installed in the camera. Due to the nature of the electronic grip, the LED indicators will not function properly in the absence of a tape.
Both LED indicators will light steady green as a warning that a tape is not installed.

Power ON / OFF

1. Pressing on the trigger button will **turn the unit ON.** The camera will automatically turn ON and the CAM indicator will light up steady green meaning that the system is ready to operate. You can also confirm this by seeing the image appear through the rear viewfinder.

2. To turn the unit OFF, simply press on the trigger button while holding the MODE button depressed. The opportunity to turn OFF the unit underwater will allow you save on battery power.

Trigger Button

Changing Mode

Depressing the Mode button for longer than 2 seconds will allow you to switch the camera to either the CAMERA (default), PHOTO or VTR (Playback) mode. You will find on the next page an explanation of these three different modes.

Trigger Button

MODE SETTINGS Camera

Mode (Default)

Press on the trigger button to start recording. The CAM. indicator light will start flashing green when recording. Pressing again on the trigger button will put the camera back on standby and the CAM. indicator light will go back to a steady green.

Photo Mode

Use the Mode button to switch from Camera mode to Photo mode. The CAM. indicator light will turn off and the PHOTO indicator light will turn on steady green. The trigger button acts as the shutter button.

VTR (Playback) Mode

Once again, use the Mode button to switch from Photo mode to VTR mode. At this mode, both indicator lights (CAM. & PHOTO) will turn on steady green. In Playback mode, the grip buttons will be used for the following functions:

^ : Rewind

►►: Fast-Forward

MODE :Stop

► :Play

Trigger Button: Pause

Zooming

Zoom functions have variable speeds. Pressing on the trigger button while zooming will accelerate the zoom.

Zoom-W - For most users, shooting in wide Angle is a safer way to achieve good quality images. As we provide the unit with a 74° wide angle lens, shooting while zoom is wide open means better control on the subject and steadier images.

Zoom-T - Zooming while shooting underwater may result in bouncing images if you are not steady with the housing. Zooming in with the camera housing will give you sharp images until you reach a certain focal point past the half zooming distance. For macro shoot you must get closer to your subject and shoot wide angle.

Focusing (Focus Lock)

Normally focus is adjusted automatically. FOCUS button will activate or deactivate the Focus Lock function on the camera. Focus Lock can be used to fix the focus on the main subject*. This features prevents the focus from switching to other subjects such as particles or fish swimming in front of the camera housing. The indicator will appear on the screen when the Focus Lock is activated.

* The Focus Lock will focus on the subject found in the middle of the viewfinder. When composing a picture, the main subject may need to be located off center. The following steps describes a method on how to achieve this.

a) Position the main subject in the middle of the viewfinder.
b) Press on the FOCUS button to lock the focus on the main subject.
c) Move the main subject to a desired location within the viewfinder.

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MAINTENANCE

WARNING: DO NOT leave the housing exposed to direct sunshine, as extreme heat condition can be detrimental to certain of its components.

1. Keep housing and o-rings away from direct sunlight. Always store unit when possible away from direct sunlight as this can dry out and crack o-rings in the housing. Ultraviolet rays can damage plastics, paint and o-rings.

2. Always rinse or soak closed housing in fresh water for 10 to 15 minutes after every use. Reach into freshwater and operate all controls to clear salt water. Do not use solvents to clean unit. If preferred, use mild detergent and clean fresh water.

3. Fasteners that are removable should occasionally have the threads lubricated with silicon grease.

4. Rinse clean and remove water spots from external filters and lens surface after every dive or water spots may build up and become impossible to remove. Dry gently with a soft, lint-free cloth.

5. Inspect housing's rear door main o-ring seals (double seals) before every dive. Make sure that there are no cracks or misalignment in the o-ring channel and that no debris is caught on the o-rings.

SERVICING OF O-RINGS

1. O-rings and sealing surface should be lightly lubricated with silicon lubricant on a regular basis. This is not necessary after every dive; every tenth dive during regular heavy use is sufficient. This should always be done before storing the housing and before a first dive after taking the housing out of storage.

2. It is important never to use a sharp instrument when removing an o-ring as this may cause damage to the o-ring or the o-ring groove. A hairpin or a credit card works well.

3. The removed o-ring should be examined for damage. Check to make sure that the o-ring is free from nicks and cuts and that it retains its original round profile. O-rings that appear to be damaged should be discarded immediately and replaced with new o-rings.

4. Rinse the o-ring with freshwater and dry it with a clean lint free cloth.

5. Clean the o-ring grooves (where the o-rings sit) with a Q-tip. Be sure to remove any lint the Q-tip may leave behind. Inspect the groove for damage.

6. Wipe the part of the housing that the o-ring seals against with a clean lint free cloth.

7. Re-grease the o-rings with a thin layer of silicon grease until it appears to be smooth and shiny. Do not over grease it - use just enough grease so that the o-ring will pull smoothly through your fingers. Excessive amounts will only attract dirt to the o-ring.

8. Replace o-rings in their proper position on the lens assembly and on the main door seal.

OPTIONAL ACCESSORIES

Optional Accessories

Extra large carry case

Aluminum carry handle

Optics

- Bayonet mounted Flat Port
- Bayonet mounted .55x lens (as supplied)
- +1, +2, +4 Diopters

Light

- 10 Watt Arc Light "HID Technology" with mounting arm

Filters

- UR PRO Blue Water 3"X 4" plastic Filter (fits on Flat Port & .55X lens)
- UR PRO Blue Water 52mm
- UR PRO Green Water 52mm

Specialty Items

- Umbilical Coaxial Video Cable (Custom lengths available)
- 3-Pin Male and Female video connectors
- Charger with 4x NiMH battery kit
- 4x NiMH battery kit
-

GENERAL SHOOTING TIPS

1. Best results will be obtained with natural light if the sun is directly overhead during calm water periods.

2. Placing the sun behind your shoulder during shooting will produce the best colors.

3. Wide angle is the preferred focus setting for best results with subject, as close as possible to the housing. This will reduce the water column and the amount of particles between subject and lens.

4. In PHOTO mode, images are going to be larger than those taken in CAMERA mode. This is due to the fact that the camera uses more recordable surface of the CCD size and results in vignetting. For good digital pictures, zoom in a bit to clear lens shade edges.

5. Zooming during shooting is not recommended unless absolutely necessary as telephoto will magnify particles. Swimming toward subject is a much more visually pleasing filming method.

6. Use image stabilizer if available on your camera when filming macro to minimize camera movement during high magnification. Image stabilizer is not as critical while using wide angle and will use battery power unnecessarily.

7. Buoyancy control is one of the most important aspects of underwater videography and diving in general. Avoid disturbing bottom silt and contacting delicate reef structures. Work on controlling your breathing and your buoyancy. Your video will be much more visually appealing. You are trying to make yourself a steady shooting platform. The less movement you make , the better your video will be. Work on attaining a comfort zone underwater. The more comfortable you are underwater, the more controlled your breathing will be and the steadier your video will be.

8. In low light situations, add light with optional Amphibico video lights for brighter and more vibrant colors. As light level falls so does color saturation. Lights will also provide necessary fill during daylight shooting. If this technique is used, filtration of light using a color correction filter will be necessary for accurate color rendition.

WARRANTY

All Amphibico products are guaranteed against defects in material or workmanship for one full year from the date of purchase for consumer use. These same products when used commercially will carry a 90-day warranty. No statutory warranty applies. Cameras housed in Amphibico housings are not covered under this warranty and ANY WATER DAMAGE SUSTAINED DUE TO INSTALLATION ERROR OR FOR ANY OTHER REASON IS NOT THE RESPONSIBILITY OF AMPHIBICO INC. Therefore the appropriate insurance should be maintained by the user.

Subject to the terms and conditions specified hereunder, Amphibico Inc. agrees to correct, either by repair or by replacement, any defect in material or workmanship which develops within one year after delivery of the product to the original purchaser.

Repair or replacement is provided in the event that investigation and factory inspection by Amphibico Inc. discloses that such a defect has developed under normal and proper use. No warranty is granted concerning components, accessories, or devices not manufactured by Amphibico Inc.

AMPHIBICO INC. SHALL BE RELEASED FROM ALL OBLIGATIONS UNDER ITS WARRANTY IN THE EVENT REPAIRS OR MODIFICATIONS ARE MADE BY PERSONNEL OTHER THAN ITS OWN OR AUTHORIZED (IN WRITING) SERVICE PERSONNEL.

Amphibico Inc., in its continued commitment to provide excellence in the field of underwater imaging, reserves the right to change specifications at any time, without notice and without incurring any obligations to incorporate new features in equipment previously sold.

CONDITIONS

Registration condition: The attached (warranty) card must be mailed to Amphibico Inc. within fourteen (14) days after retail purchase.

Repairs: The unit must be returned freight prepaid to Amphibico Inc. The returned documents must show Serial NO. and be marked " CANADIAN GOODS RETURNED." No returns will be accepted without Amphibico Inc return authorization number.

AMPHIBICO

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